DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007404
Date Inspected: 19-Jun-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works

OSM Arrival Time: 730
OSM Departure Time: 1630
Location: Muroran, Japan

CWI Name: Chung Fu Kuan

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower, Jacking, and Deviation Saddles

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and the Foundry shop at Japan Steel Works.

Machine Shop #4:

Final Machining Operation on Saddle: Tower Saddle Segment T1-1 (cast section welded to steel section)

The QA Inspector observed that tower saddle segment T1-1 is located in Machine Shop #4 to have the final machining performed. On this date, the QA Inspector observed that the interior of the north cable trough is being milled to final dimensions on the tower saddle segment.

Fabrication Shop #4:

Weld Operation in process on Saddle: Tower Saddle Segment T1-2 (cast section welded to steel section)

The QA Inspector observed the fillet weld operation on the lower stiffener plates welded to the rib plate (steel section) and stem plate (steel section) of tower saddle T1-2. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the fillet weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Kashiwada (08-2008) on plate no. 8ST-28, Mr. T. Kawakami (08-5079) on plate no. 8ST-29, and Mr. T. Inoue (81-5163) on plate no. 8ST-30 were in compliance with WPS SJ-3012-3 per the FCAW-G process in the (2F) horizontal position using (1.6) mm diameter TM55 electrode. The QA Inspector observed that the fillet weld operation was in process at the end of the QA Inspectors' shift.

NDT Operation completed on Saddle: Tower Saddle Segment T1-3 (cast section welded to steel section)
The QA Inspector observed that Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) completed the magnetic particle test (MPT) inspection (dry method) on the complete-joint penetration (CJP) and partial-joint penetration (PJP) groove welds of the rib (cast section) to rib plate (steel section) and the stem (cast section) to stem plate (steel section) on tower saddle segment T1-3. The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that the tower saddle segment will be re-located to Machine Shop #4 to have the bevels re-cut on the rib and stem plates prior to the fit-up operation of the base plate.

Storage of Saddle: West Deviation Saddle Segment W2-E1 (cast section welded to steel section)
The QA Inspector observed that west deviation saddle segment W2-E1 is located in Fabrication Shop #4. The QA Inspector observed that no other work was performed on west deviation saddle segment W2-E1 on this date.

Storage of Saddle: West Deviation Saddle Segment W2-E2 (cast section welded to steel section)
The QA Inspector observed that west deviation saddle segment W2-E2 is located in Fabrication Shop #4. The QA Inspector observed that no other work was performed on west deviation saddle segment W2-E2 on this date.

Machine Shop #2

Final Machining Operation pending on Saddle: West Deviation Saddle Segment W2-E3
The QA Inspector observed that west deviation saddle segment W2-E3 is located in Machine Shop #2. The JSW personnel completed the dimensional inspection and verified the locations of the ribs and stem against the approved drawings. Afterwards, the JSW personnel scribed the assembly control lines (ACL) on the edges of the ribs, stem and base plate for reference points during the machining operation. The QA Inspector observed that the final machining operation has not started on west deviation saddle segment W2-E3 on this date.

Fabrication Shop #4

NDT Operation in process on Saddle: West Deviation Saddle Segment W2-W1 (cast section welded to steel section)
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) performing the magnetic particle test (MPT) inspection (dry method) on the partial-joint penetration (PJP) groove welds of the rib (cast section) to rib plate (steel section) and the stem (cast section) to stem plate (steel section) on west deviation saddle segment W2-W1. The QA Inspector observed that the MPT inspection was in process on west deviation saddle segment W2-W1 at the end of the QA Inspectors' shift.

Preliminary Fit-up Operation in process on Saddle: West Deviation Saddle Segment W2-W2
The QA Inspector observed that JSW personnel completed the re-beveling operation on the rib plates and stem plate's prepared edges (face of bevels) of west deviation saddle W2-W2 (steel section). The QA Inspector observed the JSW personnel were positioning the (cast section) to verify how it will fit to the (steel section) and to see if additional grinding on the rib plate or stem plate bevel root faces may be required and also to ensure that the mill to bear fit-up tolerances are met in accordance with the contract specifications.

NDT Operation in process on Saddle: West Deviation Saddle Segment W2-W3 (built-up section)
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. M. Sato (#81) performing the magnetic particle test (MPT) inspection (dry method) on the partial-joint penetration (PJP) tee-joint groove welds on the rib plate to stem plate, rib plate to base plate, and stem plate to base plate on west

deviation saddle segment W2-W3. The QA Inspector observed that the MPT inspection was in process on west deviation saddle segment W2-W3 at the end of the QA Inspectors' shift.

Weld Operation completed on MC Shapes to Rocker Bearing Plate Assembly: East Saddle E2-W1
The QA Inspector observed that the fillet weld operation on the miscellaneous channel (MC) to the rocker bearing plate of the rocker bearing plate assembly for location E2-W1 has been completed. The next operation will be for the Nikko Inspection Services (NIS) Quality Control (QC) Inspection personnel to perform the visual and the magnetic particle test (MPT) inspection on the fillet welds in accordance with AWS D1.5-2002 Section 3.6, Section 6.26, and Section 6.7.6.2. The QA Inspector observed that no other work was performed on the rocker bearing plate assembly on this date.

Weld Operation in process on End Splay Cover Plate Assembly: East Saddle E2-E1
The QA Inspector observed the fillet weld operation on the diaphragm plate being welded in between the cover plate stiffeners on end splay cover plate assembly for east saddle E2-E1. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Nakasato (91-2247) fillet welding on diaphragm plate piece mark no.'s 24-6 (Qty = 8) and 24-7 (Qty = 4) in between cover plate stiffener piece mark no.'s 24-2 to 24-3; 24-3 to 24-4; and 24-4 to 24-5 were in compliance with WPS SJ-3177-3 per the SMAW process in the (3F) vertical position using (4.0) mm diameter LB52A electrode. The QA Inspector observed that the fillet weld operation was in process at the end of the QA Inspectors' shift.

Machine Shop #2:
Layout Operation pending on Saddle: West Deviation Saddle Segment W2-W3 (cast section)
The QA Inspector observed that west deviation saddle segment W2-W3 (cast section) is located to Machine Shop #2. The JSW personnel will perform the dimensional inspection of the ribs and stem of the west deviation saddle segment to verify the location and dimensions of the ribs and stem against the approved dimensional drawings. The JSW personnel will place the layout marks (scribe lines and punch marks) based on the assembly control lines of the ribs and stem of west deviation saddle W2-W3 (cast section). The QA Inspector observed that the layout operation of west deviation saddle segment W2-W3 (cast section) has yet to be started by the end of the QA Inspectors' shift.

Foundry Shop:
Excavation Map in process on Cast Saddle: East Saddle E2-E1 (cast saddle)
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. A. Seino (#82) preparing the major and minor repair excavation maps on east saddle E2-E1. The major repair excavation map will be submitted as an engineering communication sheet (ECS) to American Bridge Fluor (ABF) for approval by the Caltrans Engineer of the major repair excavations prior to the start of the repair weld operation. The excavated areas were previously inspected by NIS QC NDT Inspector Mr. K. Nishida (#311) by the liquid penetrant test (PT) method and the magnetic particle test (MPT) method to ensure the complete removal of the rejectable indications. The QA Inspector observed that Mr. Seino was in process on preparing the excavation maps for east saddle E2-E1 at the end of the QA Inspectors' shift.

Weld Operation completed on Cast Saddle: East Saddle E2-W1 (cast saddle)

The QA Inspector observed that the repair weld operation on the excavated areas on the exterior of the trough, stem and ribs has been completed on east saddle E2-W1. The next operation will be the post weld heat treatment (PWHT) stress relief operation on the cast saddle. On this date, the QA Inspector observed that the cast saddle was in process of being moved to the heat treatment shop to perform the PWHT operation.

Shaping Operation in process on Saddle: West Jacking Saddle (cast saddle)

The QA Inspector observed the JSW personnel performing the shaping (scarfing) operation- (removal of excess cast material on the rough casting) by the air-carbon arc gouge method using (19) mm diameter carbon electrode on the opposite side of the identification (ID) side on the trough, stem and rib sections of the west jacking saddle to profile the trough, stem, and rib sections of the west jacking saddle to the proper shape, dimension and radius. The QA Inspector observed that the JSW personnel were in process on the shaping operation at the end of the QA Inspectors' shift.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the applicable contract specifications.

Summary of Conversations:

No significant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, 510 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Peterson,Art	Quality Assurance Inspector
Reviewed By:	Guest,Kittric	QA Reviewer